Mobile Devices and Mobile Learning: Shifting the Mindset of Teachers and Learners

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ABSTRACT

Incorporating new media technologies that enable mobile learning to be part of educational practice poses challenges to those used to teaching in a traditional classroom environment. In this article, three lecturers and a learning advisor from a New Zealand university reflect on their experiences in the progressive redesign of a Bachelor of Arts degree paper. Students were tasked with using mobile devices to make short movies and incorporate digital platforms and social media as part of mobile learning. A design-based research approach assisted the lecturers to use the transition of the paper over a two-year period as a case study to demonstrate how a change in mindset and skill base was necessary for them as well as the students in adapting to a mobile learning environment. Findings from this research indicate that the students’ ability to apply creative skills using mobile devices, plus the lecturers’ willingness to embrace new formats, enhanced the learning and teaching experience. Finally, this article presents guidelines to assist other institutions wishing to update courses to incorporate mobile learning.

KEYWORDS
Design-based Research, Mobile Devices, Mobile Learning, Movies, PAH Continuum

INTRODUCTION

With advances in technology, it is not surprising that mobile devices have penetrated the educational life of the new generation. According to a Pearson survey conducted in the U.S., over 50% of middle school students use smartphones and tablets for in-class and at-home study; for high school students, the percentage is above 60% (Harris Interactive, 2013). At the end of 2012, there were around 6.8 billion mobile phone subscriptions in the world (International Telecommunications Union, 2013), held by an estimated 3.2 billion subscribers. In 2013, the actual number of mobile phone users was put at 4.3 billion, i.e., over 60% of the entire world population (mobiThinking, 2013). In Switzerland, 99% of all teenagers own a mobile phone, and identify using it as their favourite spare time activity (Cattaneo, Motta, & Gurtner, 2015) - an attitude that is likely to be shared by teenagers the world over. This increased use of mobile technology is also the case in New Zealand where just under 70% of internet users (over the age of 16) have access to a smartphone, and around 45% to a tablet.

DOI: 10.4018/IJMBL.2016100101

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In terms of technology use and education, it was noted several years ago that 99% of British schools were connected to the Internet (Amiel & Reeves, 2008), and that because of the growing popularity of smartphones, tablets and other mobile devices, educators are now able to accommodate and support an increasingly mobile society (Berge & Muilenburg, 2013). On the whole, introducing mobile-based learning through wireless devices into the educational environment has elicited a range of responses, with some teachers perceiving it as a threat to their authority and a distraction from education (Seifert, 2015). However, the need for teachers to engage with students in an increasingly digital world requires them to push the boundaries of their own educational practice and technological capabilities whereby they can experiment with and adopt mobile learning strategies.

To pursue what Parsons (2014) refers to as a broader vision of mobile learning through research, we draw upon a design-based research paradigm that acknowledges the interaction between “technological interventions, the roles of educational institutions, […] the purposes of education, and the meaning of research” (Amiel & Reeves, 2008, p.32). We use our own experience in the gradual integration of mobile learning and user-generated content into a tertiary-level paper in New Zealand as a case study to illustrate the “design of an intervention and its specific enactments as objects of research” (The Design-Based Research Collective, 2003, p. 8).

A DESIGN-BASED RESEARCH APPROACH

The central tenet in design-based research is that the research is conducted in order to explore possible solutions to real learning and teaching issues (Herrington, Reeves, & Oliver, 2010). The design of the solution is informed by a review of literature pertaining to the identified issues. Lastly, the solution is implemented and tested iteratively. As such, design-based research provides a framework through which theory and practice are explored together leading to an increased knowledge and understanding of theory and practice in an authentic research context (Reeves, 2006).

According to Amiel and Reeves (2008), design-based research is one way of addressing some of the shortfalls of other research methods in examining the role of tools and techniques in the classroom. However, we note that technology should be recognised as a process rather than an artefact, allowing researchers to question their research methods and the values that guide research agendas, which would help them to direct this technological development rather than simply react to it. We further argue that this involves a series of testing and refinement cycles (including collecting the data to redefine the problems, looking at possible solutions and at the principles that might best address them), which allows a continuous cycle of design-reflection-design. Holmberg (2014, p. 294) argues that design-based research can:

help to bridge the disconnection between educational research and educational practice;
improve conditions for informed research on the use of educational technologies; and
provide empirical advice to support teachers’ informed use of educational technologies.

Holmberg (2014) suggests “revisiting Schön’s ideas about a focus in educational research on the knowledge that teachers generate through reflection-in-action and reflection-on-action, both of which are integral parts of what he refers to as a reflective conversation with the (design) situation” (p.295). In line with Schön’s (1983) approach we conducted a study to measure the success of the integration of mobile learning into an educational environment.

The increasing use of technology in teaching has an impact upon teachers who deal with the many challenges and opportunities in not only learning how to use technology in their teaching, but also in seeking to support their students in accomplishing the same capability in their study